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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,613	02/04/2004	Roger Keith Stager	ALA-PT011	3439

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EXAMINER	
LE, DIEU-MINH T	

ART UNIT	PAPER NUMBER
2114	

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/771,613	STAGER ET AL.	
	Examiner	Art Unit	
	Dieu-Minh Le	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Part III DETAILED ACTION

Specification

1. This Office Action is in response to the application 10/771,613 filed on 07/12/04.

2. Claims 1-16 are presented for examination.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zalweski et al. (U.S. 7,032,126 hereafter referred to as Zalweski_126) in view of Zalweski et al. (U.S. Pub. No. 2005/0010529 hereafter referred to as Zalweski_529).

As per claim 1:

Zalweski_126 substantially teach the invention. Zalweski_126 teaches:

- A method for providing continuous data protection [abstract, fig.1-3, col. 1, lines 40-50; col. 2, lines 20-276] method comprising the steps of:

- duplicating writes (i.e., ***snapshots***) of the storage volume [fig.1-3, col. 2, lines 28-39; col. 6, lines 13-25];
- organizing the mapping of the writes (i.e., ***snapshots***) [fig. 1-3, col. 4, lines 30-50; col. 5, lines 11-28];
- to be rewound to any point in time (i.e., loading the selected snapshot at the selected location/ APIT) [fig.1-3, col. 2, lines 28-39; col. 4, lines 30-50; col. 5, lines 11-28; col. 6, lines 13-25].

Zalweski_126 does not explicitly address:
- the method having a primary volume and a secondary volume.

However, Zalweski_126 does disclose capability of:
- A method and apparatus for creating a dynamic storage for data recovery and ***continuous*** data protection [abstract, fig.1-3, col. 1, lines 40-50; col. 2, lines 20-27] comprising:
- a ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including identifying data (i.e., previous state data), preventing data loss, etc… in

a ***plurality of data storage volumes*** [fig. 1-3, col. 4, lines 30-50].

In addition, Zalweski_529 explicitly teaches:

- A method and apparatus for building a complete and continuous data protection scheme and recovery [abstract, par. 0002] comprising:

- a ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including data mirroring and policy in a ***plurality of data storage volumes including primary and secondary set of data*** [abstract, fig. 1-4, par. 0005, 0011,0017-0019].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Zalweski_126's ***failover operations, snapshot, and a point-in-time (APIT/PIT) used to support failover, data recovery/protection process including identifying data (i.e., previous state data), preventing data loss, etc... in a plurality of data storage volumes*** as being the system having a primary volume and a secondary volume as claimed by Applicant. This is because Zalweski_126 performed data operating system failure

detection and recovery via data/error monitoring, detecting, continuously protection, and correcting processes (i.e., failover). By utilizing these capabilities, the data resided in storage volumes can be recovered and protected directed, promptly and functioned properly during failover switching process via APIT/PIT snapshot procedure; second, by applying the failover operations, snapshot, and a point-in-time (APIT/PIT) ***used to support failover, data recovery/protection process including data mirroring and policy in a*** plurality of data storage volumes including primary and secondary set of data as taught by Zalweski_529 in conjunction with the method and apparatus for creating a dynamic storage for data recovery and ***continuous*** data protection as taught by Zalweski_126, the multi-data storage volumes data system including backup capability (i.e., OS failover) can enhance its operation performance, more specifically to ensuring the error detected, corrected, and replaced (i.e., backup) in proper and efficient manner.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to improve the system operation availability and network/system performance therein with a mechanism to enhance the data connectivity, data debugging, data recovery, data

protection, data reliability, and data throughput which eventually will increase its performance, such as data throughput between internal and external devices.

As per claims 2 and 4-5:

Zalweski_126 further teaches:

- accessing the snapshot via a host computer [fig.1-3, col. 4, lines 1-29];
- a sequential order according to the time writes (i.e., prioritization, a point in time (PIT) map for the selected snapshot [fig. 1-3, col. 2, lines 40-49; col. 4, lines 30-50; col. 5, lines 11-28].
- ***merging mapping data structure*** [fig. 1-3, col. 4, lines 30-50].

Zalweski_126 does not explicitly address:

- the method having a primary volume and a secondary volume.

However, Zalweski_126 does disclose capability of:

- A method and apparatus for creating a dynamic storage for data recovery and ***continuous*** data protection [abstract,

fig.1-3, col. 1, lines 40-50; col. 2, lines 20-27] comprising:

- a ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including identifying data (i.e., previous state data), preventing data loss, etc… in a ***plurality of data storage volumes*** [fig. 1-3, col. 4, lines 30-50].

In addition, Zalweski_529 explicitly teaches:

- A method and apparatus for building a complete and continuous data protection scheme and recovery [abstract, par. 0002] comprising:

- a ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including data mirroring and policy in a ***plurality of data storage volumes including primary and secondary set of data*** [abstract, fig. 1-4, par. 0005, 0011,0017-0019].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Zalweski_126's ***failover operations, snapshot,***

and a point-in-time (APIT/PIT) used to support failover, data recovery/protection process including identifying data (i.e., previous state data), preventing data loss, etc… in a plurality of data storage volumes as being the method having a primary volume and a secondary volume as claimed by Applicant. This is because Zalweski_126 performed data operating system failure detection and recovery via data/error monitoring, detecting, continuously protection, and correcting processes (i.e., failover). By utilizing these capabilities, the data resided in storage volumes can be recovered and protected directed, promptly and functioned properly during failover switching process via APIT/PIT snapshot procedure; second, by applying the failover operations, snapshot, and a point-in-time (APIT/PIT) ***used to support failover, data recovery/protection process including data mirroring and policy in a*** plurality of data storage volumes including primary and secondary set of data as taught by Zalweski_529 in conjunction with the method and apparatus for creating a dynamic storage for data recovery and ***continuous*** data protection as taught by Zalweski_126, the multi-data storage volumes data system including backup capability (i.e., OS failover) can enhance its operation performance.

This modification would have been obvious because a person having ordinary skill in the art would have been motivated to do so to improve the system operation availability and network/system performance therein with a mechanism to enhance the data connectivity, data debugging, data recovery, and data protection.

As per claims 3, 6-7:

Zalweski_126 further teaches the invention.

- a mapping data structure is configured to keep track of changes between two points in time (i.e., ***snapshot planning***) [fig.1-3, col. 2, lines 40-49; col. 6, lines 13-25];
- merging mapping data structures that have the same expiration policy to enhance system performance (i.e., ***logical protection policy including access control***) [fig.1-3, col. 2, lines 28-39 and 50-67];
- fading out data by merging the mapping data structures thereby freeing up blocks that are no longer used (i.e., ***snapshot planning***) [fig.1-3, col. 2, lines 28-39; col. 6, lines 13-25].

In addition, Zalweski_529 explicitly teaches:

- selecting a scheduled snapshot (i.e., ***snapshot planning***) [fig.1-4, par. 0014];

- selecting an any point in time (i.e., ***APIT/PIT***) [fig.1-3, par. 0014];

As per claims 8-11:

Due to the similarity of claims 8-11 to claims 1-7 except for a method for providing continuous data protection comprising a primary and secondary volumes for storing data, duplicating writes, etc… instead of the method for providing continuous data protection comprising a primary and secondary volumes for storing data, duplicating writes, etc… as described in claims 1-7; therefore, these claims are also rejected under the same rationale applied against claims 1-7. **In addition, all of the limitations have been noted in the rejection as per claims** 1-7. Such as, Zalweski_126 does disclose capability of:

- A method and apparatus for creating a dynamic storage for data recovery and ***continuous*** data protection [abstract, fig.1-3, col. 1, lines 40-50; col. 2, lines 20-27] comprising:

- a ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including identifying data

(i.e., previous state data), preventing data loss, etc… via ***dynamically mapping process*** [fig. 1-3, col. 4, lines 30-50].

In addition, Zalweski_529 explicitly teaches:

- A method and apparatus for building a complete and continuous data protection scheme and recovery [abstract, par. 0002] comprising:

- a ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including data ***mirroring (i.e., mapping)*** and policy in a plurality of data storage volumes including primary and secondary set of data [abstract, fig. 1-4, par. 0005, 0011,0017-0019].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Zalweski_126's ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including identifying data (i.e., previous state data), preventing data loss, etc… via ***dynamically mapping process*** as being the merging the created delta maps as claimed by Applicant. This is because Zalweski_126 performed

data operating system failure detection and recovery via data/error monitoring, detecting, continuously protection, and correcting processes (i.e., failover). By utilizing these capabilities, the data resided in storage volumes can be recovered and protected directed, promptly and functioned properly during failover switching process via APIT/PIT snapshot procedure; second, by applying the ***failover operations, snapshot, and a point-in-time (APIT/PIT)*** used to support failover, data recovery/protection process including ***data mirroring and policy*** in a plurality of data storage volumes including primary and secondary set of data as taught by Zalweski_529 in conjunction with the method and apparatus for creating a dynamic storage for data recovery and ***continuous*** data protection as taught by Zalweski_126, the multi-data storage volumes data system including backup capability (i.e., OS failover) can enhance its operation performance, more specifically to ensuring the error detected, corrected, and replaced (i.e., backup) in proper and efficient manner for the same reasons set forth as described in claim 1, **supra**.

As per claims 12-16:

Due to the similarity of claims 12-16 to claims 1-7 except for a system for providing continuous data protection comprising

a primary and secondary volumes for storing data, duplicating writes, etc… instead of the method for providing continuous data protection comprising a primary and secondary volumes for storing data, duplicating writes, etc… as described in claims 1-7; therefore, these claims are also rejected under the same rationale applied against claims 1-7. **In addition, all of the limitations have been noted in the rejection as per claims** 1-11. Such as ***a host computer, server are clearly illustrated in the invention*** [Zalweski_126 , fig.1-3, col. 4, lines 1-29; col. 6, claim 1].

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (703)305-9408. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 6:30 PM.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571)272-3644. The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIEU-MINH THAI LE
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